


In the Claims:

Please amend the claims as follows:

1. (twice amended) A method for developing a custom farm management plan for production agriculture pertaining to a farm, comprising the steps of:

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- ~~a. prompting a user to input information pertaining to said farm;~~
  - ~~b. obtaining said input information pertaining to said a farm from said user via an electronic communications network;~~
  - ~~c. obtaining third-party industry financial information from at least one third-party industry professional;~~
  - ~~d. generating a mathematical model of said farm based on said input information and said third-party industry information;~~
  - ~~e. analyzing said mathematical model input information pertaining to said farm and said third-party financial information in accordance with a mathematical model having an objective function for profit maximization bounded by resource constraints;~~
  - ~~f. maximizing the objective function to generating generate a corresponding first custom farm management plan based on said analyzing of said mathematical model; and input information and said third-party financial information, the objective function indicative of a corresponding economic performance of the farm for display or provision to said user.~~
  - ~~g. transmitting said custom farm management plan to said user in a form displayable by said user.~~

2. (once amended) The method according to claim 1 wherein said custom farm management plan for production agriculture comprises at least one of a graphical display and a tabular display of crop selection and allocation of farm resources for seasonal or multi-seasonal cropping strategies.

3. (once amended) The method according to claim 2 wherein said farm resources comprise one or more of the following: capital, land, labor, ~~and~~ machinery, crop storage, irrigation system capacity, ~~and~~ water rights, and nutrient loading.

4. (canceled) The method according to claim 1 wherein said prompting said user to input information comprises the step of transmitting an instruction signal to said user via said electronic communications network.

5. (original) The method according to claim 1 wherein said input information pertaining to said farm is at least one farm management preference selected from the group of agronomic, operational and physical farm information.

6. (once amended) The method according to claim 1 wherein ~~industry~~ the third-party financial information is selected from the group of seed prices, fertilizer prices, production contracts, agriculture insurance rates, agriculture marketing information, agriculture consultant's information, agriculture accounting information, and lender's interest rates.

7. (canceled) The method according to claim 1 wherein said third party industry professional is selected from the group of input supply retailers, seed manufacturers, crop protection manufacturers, seed manufacturers' representatives, crop protection manufacturers' representatives, independent crop consultants, crop insurance agents, agricultural lenders, marketing advisors, agricultural certified public accountants, agricultural equipment manufacturers, and agricultural equipment manufacturers' dealers.

8. (canceled) The method according to claim 1 wherein the analyzing said mathematical model including information pertaining to said farm is a mathematical optimization algorithm selected from the group of linear, integer, mixed integer programming, and parametric programming.

9. (canceled) The method according to claim 1 wherein said global electronic communication network is selected from the group consisting of the Internet, an Intranet, an extranet, a Local Area Network, a telephone network, a cellular network, a satellite network, a personal communication system, a television network, a wireless data network, a wireless Local Area Network, a wireless local loop/distribution system, a Voice Over Internet Protocol network, and a wide area network.

10. (canceled) The method according to claim 1 further comprising the step of allowing access to said input information by said third party industry professional.

11. (canceled) The method according to claim 1 wherein said form of said custom farm management plan is a tabular form.

12. (canceled) The method according to claim 1 wherein said form of said custom farm management plan is a graphical form.

13. (once amended) The method according to claim 1 further comprising the step of performing an iterative process to determine at least one additional farm management plan, wherein said iterative process comprises modifying at least one controllable variable associated with the mathematical model, said at least one controllable variable selected from the group of crop programs, crop rotation patterns, different amounts of production contracts, different types of production contracts, and crop insurance.

14. (canceled) The method according to claim 13 wherein said iterative process comprises modifying at least one controllable variable of said mathematical model, said at least one controllable variable selected from the group of crop programs, crop rotation patterns, different amounts of production contracts, different types of production contracts, and crop insurance.


15. (previously amended) The method according to claim 13 wherein said iterative process comprises modifying at least one uncontrollable variable of said mathematical model, said at least one uncontrollable variable selected from the group of crop prices, yields and production costs.

16. (original) The method according to claim 13 wherein said user selects a desired farm management plan that meets desired goals from the first farm management plan and the at least one additional farm management plan.

17. (original) The method according to claim 16 wherein said user compares between the first farm management plan and the at least one additional farm management plan based on gross income, downside risk, opportunity cost risk and resource use.

18. (original) The method according to claim 16 wherein said desired farm management plan is determined from profit maximization, risk minimization, resource minimization, and environmental stewardship.

19. (canceled) A farm management system for developing a custom farm management plan for production agriculture for a farm, comprising:

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- a. a first computer, said first computer comprising a first microprocessor, a first memory storage, and a first display;
  - b. a second computer, said second computer comprising a second microprocessor, a second memory storage, and a second display, said second computer located remotely from said first computer;
  - c. a host computer, said host computer comprising a host microprocessor and a host memory storage;
  - d. an electronic communications network, said network electronically coupling the host computer and said first computer and said second computer, such that said first computer and said second computer can communicate with said host computer;
  - e. a host computer program, said computer program being resident in said host memory storage, said computer program configured to request and receive input information pertaining to a farm from said first computer, said input information comprising agricultural information relating to said farm;
  - f. said computer program configured to receive third party industry information from a third party industry professional using said second computer, said third party industry information comprising agricultural information relating to said third party industry professional;
  - g. said computer program configured to generate and analyze a mathematical model based on said input information pertaining to said farm, and said third party industry information from said third party industry professional using said second computer;
  - h. said computer program configured to generate a custom farm management plan for a user based on said analysis of said mathematical model;

i. said computer program configured to transmit over the electronic communications network said custom farm management plan to said user in a form displayable on said first computer.

20. (canceled) The farm management system according to claim 19 wherein said custom farm management plan for production agriculture comprises crop selection and allocation of farm resources for seasonal or multi-seasonal cropping strategies.

21. (canceled) The farm management system according to claim 20 wherein said farm resources comprise capital, land, labor, and machinery, crop storage, irrigation system capacity and water rights, nutrient loading.

22. (canceled) The farm management system according to claim 19 wherein said configured to request input information comprises transmitting an instruction signal to said first computer via said electronic communications network.

23. (canceled) The farm management system according to claim 19 wherein said input information pertaining to said farm is at least one farm management preference selected from the group of agronomic, operational and physical farm information.

24. (canceled) The farm management system according to claim 19 wherein third party industry information is selected from the group of seed prices, fertilizer prices, production contracts, agriculture insurance rates, agriculture marketing information, agriculture accounting information, and lender's interest rates.

25. (canceled) The farm management system according to claim 19 wherein said third party industry professional is selected from the group of input supply retailers, seed manufacturers, crop protection manufacturers, seed manufacturers' representatives, crop protection manufacturers' representatives, independent crop consultants, crop insurance agents, agricultural lenders, marketing advisors, agricultural certified public accountants, agricultural equipment manufacturers, and agricultural equipment manufacturers' dealers.

26. (canceled) The farm management system according to claim 19 wherein configured to analyze said input information pertaining to said farm is a mathematical optimization algorithm selected from the group of linear, integer, mixed integer programming, and parametric programming.

27. (canceled) The farm management system according to claim 19 wherein said electronic communication network is selected from the group consisting of the Internet, an Intranet, an extranet, a Local Area Network, a telephone network, a cellular network, a satellite network, a personal communication system, a television network, a wireless data network, a wireless Local Area Network, a wireless local loop/distribution system, a Voice Over Internet Protocol network, and a wide area network.

28. (canceled) The farm management system according to claim 19 further comprising a computer program configured to allow access to said input information by said third party industry professional.

29. (canceled) The farm management system according to claim 19 wherein said form of said custom farm management plan is in tabular form.

30. (canceled) The farm management system according to claim 19 wherein said form of said custom farm management plan is a graphical form.

31. (canceled) The farm management system according to claim 19 further comprising a computer program configured to perform an iterative process to determine at least one additional farm management plan.

32. (canceled) The farm management system according to claim 31 wherein said iterative process comprises the modification of at least one controllable variable, said at least one controllable variable selected from the group of crop programs, crop rotation patterns, different amounts of production contracts, different types of production contracts, and crop insurance.

33. (canceled) The farm management system according to claim 31 wherein said iterative process comprises the modification of at least one uncontrollable variable, said at least one uncontrollable variable selected from the group of crop prices, yields and production costs.

34. (canceled) The farm management system according to claim 31 wherein said user selects a desired farm management plan that meets desired goals from the farm management plan and the at least one additional farm management plan.

35. (canceled) The farm management system according to claim 34 wherein said user compares between the farm management plan and the at least one additional farm management plan based on gross income, downside risk, opportunity cost risk and resource use.

36. (canceled) The farm management system according to claim 34 wherein said desired farm management plan is determined from profit maximization, risk minimization, resource minimization, and environmental stewardship.

37. (canceled) A computer readable medium comprising a computer program code for generating a custom farm management plan for production agriculture for a farmer pertaining to a farm, said computer program comprising:

a. a computer program code for requesting and receiving input information from said farmer, said input information comprising agricultural information relating to said farm;

b. a computer program code for receiving third party industry information from a third party, said third party industry information comprising agricultural information relating to said third party;

c. a computer program code for generating and analyzing a mathematical model of said farm based said input information from said farmer, and said third party industry information from said third party;

d. a computer program code for generating a custom farm management plan for said farmer based on said mathematical model analysis;

e. a computer program code for transmitting over an electronic communications network said custom farm management plan to said farmer.

38. (canceled) The computer readable medium according to claim 37 wherein said custom farm management plan for production agriculture comprises crop selection and allocation of farm resources for seasonal or multi-seasonal cropping strategies.

39. (canceled) The computer readable medium according to claim 38 wherein said farm resources comprise capital, land, labor, machinery, crop storage, irrigation system capacity and water rights, and nutrient loading.

40. (canceled) The computer readable medium according to claim 37 wherein said computer program code for requesting input information comprises the step of transmitting an instruction signal to said user via said electronic communications network.

41. (canceled) The computer readable medium according to claim 37 wherein said input information pertaining to said farm is at least one farm management preference selected from the group of agronomic, operational and physical farm information.

42. (canceled) The computer readable medium according to claim 37 wherein said third party industry information is selected from the group of seed prices, fertilizer prices, production contracts, agriculture insurance rates, agriculture marketing information, agriculture consultant's information, agriculture accounting information, and lender's interest rates.

43. (canceled) The computer readable medium according to claim 37 wherein said third party is selected from the group of input supply retailers, seed manufacturers, crop protection manufacturers, seed manufacturers' representatives, crop protection manufacturers' representatives, independent crop consultants, crop insurance agents, agricultural lenders, marketing advisors, agricultural certified public accountants, agricultural equipment manufacturers, and agricultural equipment manufacturers' dealers.

44. (canceled) The computer readable medium according to claim 37 wherein said computer program code for analyzing said generating and analyzing said mathematical model is a mathematical optimization algorithm selected from the group of linear, integer, mixed integer programming, and parametric programming.

45. (canceled) The computer readable medium according to claim 37 wherein said electronic communication network is selected from the group consisting of the Internet, an Intranet, an extranet, a Local Area Network, a telephone network, a cellular network, a satellite network, a personal communication system, a television network, a wireless data network, a wireless Local Area Network, a wireless local loop/distribution system, a Voice Over Internet Protocol network, and a wide area network.



46. (canceled) The computer readable medium according to claim 37 further comprising a computer program code for allowing access to said input information by said third party.

47. (canceled) The computer readable medium according to claim 37 further comprising computer program code for performing an iterative process to determine at least one additional farm management plan.

48. (canceled) The computer readable medium according to claim 47 wherein said computer program code for performing an iterative process comprises modifying at least one controllable variable, said at least one controllable variable selected from the group of crop programs, crop rotation patterns, different amounts of production contracts, different types of production contracts, and crop insurance.

49. (canceled) The computer readable medium according to claim 47 wherein said computer program code for performing an iterative process comprises modifying at least one uncontrollable variable, said at least one uncontrollable variable selected from the group of crop prices, yields and production costs.

50. (canceled) The computer readable medium according to claim 47 wherein said farmer selects a desired farm management plan that meets desired goals from the farm management plan and the at least one additional farm management plan.

51. (canceled) The computer readable medium according to claim 50 wherein said farmer compares between the farm management plan and the at least one additional farm management plan based on gross income, downside risk, opportunity cost risk and resource use.

52. (canceled) The computer readable medium according to claim 50 wherein said desired farm management plan is determined from profit maximization, risk minimization, resource minimization, and environmental stewardship.

53. (new) The method according to claim 1 wherein the objective function is expressed as the following representation:

$$\text{Max } Z \sum c_j y_j x_j - p_j x_j,$$

where Max Z represents a maximization function,  $c_j$  is the price/yield unit,  $y_j$  is the yield/acre for crop identifier j,  $x_j$  represent a crop program variable for crop identifier j, and  $p_j$  is production costs/acre for crop identifier j.

54. (new) The method according to claim 1 wherein the resource constraints are expressed as the following equation:

$$\sum a_{ij} x_j + a_i x_j + \dots a_{ij} x_n \leq b_i \text{ for each } i$$

where  $a_{ij}$  is a constraint coefficient that represents a measure of resource consumption of resource i, for crop identifier j, where  $x_j$  represent crop program variable, where  $b_i$  represent a maximum farm resource limitation for resource i, where j ranges from 1 to n.

55. (new) The method according to claim 1 wherein the objective function is expressed as the following representation:

$$\text{Max } Z \sum [c_j y_j x_j - p_j x_j] * z_{in},$$

where Max Z represents a maximization function,  $c_j$  is the price/yield unit,  $y_j$  is the yield/acre for crop identifier j,  $x_j$  represent a crop program variable for crop identifier j, and  $p_j$  is production costs/acre for crop identifier j, and where  $z_{in}$  is a binary variable with a value of 0 or 1, representing the presence or absence of a planted crop i in field n.

56. (new) The method according to claim 1 wherein the resource constraints are expressed as the following representation of a land constraint:

$\sum x_1 * z_{1n} + x_2 * z_{2n} + \dots + x_n * z_{nn} \leq b_{land}$ , wherein  $x_1$  represents total acres of crop 1,  $x_2$  represents total acres of crop 2 up to  $x_n$  representing total acres of crop n, where  $z_{in}$  is a binary variable with a value of 0 or 1, representing the presence or absence of a planted crop i in field n.

57. (new) The method according to claim 1 wherein the resource constraints are expressed as the following representation of a land constraint:

$\sum x_1 + x_2 + \dots + x_n \leq b_{land}$ , wherein  $x_1$  represents total acres of crop 1,  $x_2$  represents total acres of crop 2 up to  $x_n$  representing total acres of crop n.

58. (new) The method according to claim 1 wherein the resource constraints are expressed as the following representation of a land constraint:

$\sum p_1 x_1 * z_{1n} + p_2 x_2 * z_{2n} + \dots + p_n x_n * z_{nn} \leq b_{capital}$ , wherein  $x_1$  represents total acres of crop 1,  $x_2$  represents total acres of crop 2 up to  $x_n$  representing total acres of crop n, wherein  $p_1$  represents total production cost of crop 1,  $p_2$  represents total production cost of crop 2 up to  $x_n$  representing total production cost of crop n, where  $z_{in}$  is a binary variable with a value of 0 or 1, representing the presence or absence of a planted crop i in field n.

59. (new) A system for developing a custom farm management plan for production agriculture pertaining to a farm, comprising the steps of:

a first module for obtaining input information pertaining to a farm from said user via an electronic communications network;

a second module for obtaining third-party financial information;

a third module for analyzing said input information pertaining to said farm and said financial information in accordance with a mathematical model having an objective function for profit maximization bounded by resource constraints; and

a fourth module for maximizing the objective function to generate a corresponding first custom farm management plan based on said input information and said third-party financial information to, the objective function indicative of a corresponding economic performance of said farm for display or provision to said user.

60. (new) The system according to claim 59 wherein the objective function is expressed as the following representation:

$$\text{Max } Z \sum c_j y_j x_j - p_j x_j,$$

where Max Z represents a maximization function,  $c_j$  is the price/yield unit,  $y_j$  is the yield/acre for crop identifier j,  $x_j$  represent a crop program variable for crop identifier j, and  $p_j$  is production costs/acre for crop identifier j.

61. (new) The system according to claim 59 wherein the resource constraints are expressed as the following equation:

$$\sum a_{ij} x_j + a_i x_j + \dots a_{ij} x_n \leq b_i \text{ for each } i$$

where  $a_{ij}$  is a constraint coefficient that represents a measure of resource consumption of resource i, for crop identifier j, where  $x_j$  represent crop

program variable, where  $b_i$  represent a maximum farm resource limitation for resource  $i$ , where  $j$  ranges from 1 to  $n$ .

62. (new) The system according to claim 59 wherein the objective function is expressed as the following representation:

$$\text{Max } Z \sum [c_j y_j x_j - p_j x_j] * z_{in}$$

where Max Z represents a maximization function,  $c_j$  is the price/yield unit,  $y_j$  is the yield/acre for crop identifier  $j$ ,  $x_j$  represent a crop program variable for crop identifier  $j$ , and  $p_j$  is production costs/acre for crop identifier  $j$ , and where  $z_{in}$  is a binary variable with a value of 0 or 1, representing the presence or absence of a planted crop  $i$  in field  $n$ .

63. (new) The system according to claim 59 wherein the resource constraints are expressed as the following representation of a land constraint:

$\sum x_1 * z_{1n} + x_2 * z_{2n} + \dots + x_n * z_{nn} \leq b_{land}$ , wherein  $x_1$  represents total acres of crop 1,  $x_2$  represents total acres of crop 2 up to  $x_n$  representing total acres of crop  $n$ , where  $z_{in}$  is a binary variable with a value of 0 or 1, representing the presence or absence of a planted crop  $i$  in field  $n$ .

64. (new) The system according to claim 59 wherein the resource constraints are expressed as the following representation of a land constraint:

$\sum x_1 + x_2 + \dots + x_n \leq b_{\text{land}}$ , wherein  $x_1$  represents total acres of crop 1,  $x_2$  represents total acres of crop 2 up to  $x_n$  representing total acres of crop  $n$ .

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